

THESIS

EXUBERANT CHILDREN AND THEIR PEER RELATIONSHIPS

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WE HEREBY RECOMMEND THAT THE THESIS PREPARED UNDER OUR SUPERVISION BY CARRIE SMALLEY ENTITLED EXUBERANT CHILDREN AND THEIR PEER RELATIONSHIPS BE ACCEPTED AS FULFILLING IN PART REQUIREMENTS FOR THE DEGREE OF MASTER OF SCIENCE.

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## ABSTRACT OF THESIS

### EXUBERANT CHILDREN AND THEIR PEER RELATIONSHIPS

The current study examined exuberant young children and their relationships with peers. 41 children between the ages of four and six were recruited from Fort Collins, Colorado and 13 of these children were found to be exuberant. Children were classified as exuberant if they scored in the top tercile of an aggregate of certain emotions subscales and certain emotion regulation subscales on the Children's Behavior Questionnaire and the Emotions Questionnaire. To determine with whom the children preferred to play, they completed a sociometric picture measure where they categorized their peers' photos into three categories: "I like to play with", "I kind of like to play with", and "I do not like to play with". The results indicated that middle children had a significantly higher percentage of friends who were exuberant than exuberant children did. There were no significant differences in other analyses regarding the peer relationships of exuberant children. The results indicate that more research with larger samples is needed in order to investigate the nature of friendships in exuberant children.

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## **Chapter 1: Literature Review**

### **Exuberant Children and Their Peer Relationships**

The current study examined the relation between exuberance and peer relationships in early childhood. Historically, negative affect has been the focus of research much more often than positive affect (Rydell, Berlin, & Bohlin, 2003). For this reason, information regarding intense positive emotion/exuberance was undiscovered until approximately 1995 (Caspi & Silva, 1995). Exuberance is beginning to be studied more frequently and important information is being reported. It is important to distinguish exuberance from other related constructs. Thus, first I will discuss the temperamental dimension of positive affect and how that differs from exuberance. Next, the recent important findings regarding exuberant children will be discussed. This includes findings that have discovered a possible genetic basis for exuberance (Schmidt & Fox, 2002), findings that predict later behavior problems (Rydell et al., 2003; Putnam & Stifter, 2005; Eisenberg, Fabes, Guthrie, Murphy, Maszk, Holmgren, & Suh, 1996), findings that show that exuberance is a consistent trait over time (Fox, Henderson, Rubin, Calkins, & Schmidt, 2001), and findings that associate exuberance with low levels of prosocial behavior (Rydell et al., 2003).

Finally, I will discuss the friendship literature in order to discover why children choose the friends they do. In this section, the “similarity-attraction hypothesis” will be discussed and related to exuberant children.

## **Temperament and Positive Affect**

Temperament is a precursor, or foundation, of personality that has been shown to be very consistent and stable over time and across situations. Temperamental differences between children can be seen in early infancy. For example, some infants like to be cuddled and other infants cry when they are cuddled. Some infants approach new things while other infants withdraw from new things (Caspi & Silva, 1995). Temperament is defined by Rothbart and Bates (1998) as being “constitutionally based individual differences in emotional, motor, and attentional reactivity and self-regulation” (p. 109). The authors use the term constitutional to indicate that temperament is biologically based. The biological base is influenced by genetic inheritance as well as maturation and experience. In this definition, reactivity is a term for a psychological process where people with different temperaments will respond in different manners to the same situation. The intensity, onset, and duration of an expression of an affective reaction can be measured. The levels of “arousability and distress to overstimulation, activity, and attention” (Rothbart & Bates, 1998, p. 109) can also be measured. Each of these measures helps determine a person’s level of reactivity. Finally, the authors use the term self-regulation as a second type of psychological process to indicate that people are able to modify their reactivity to situations in life (Rothbart & Bates, 1998).

There are many different dimensions of temperament and each deserves attention. However, this paper will focus on the dimension of positive affect. A person who is temperamentally high in positive affect would typically be described as someone who is usually happy, cheerful, and agreeable. Positive affect, thus defined, is associated with prosocial behavior, competence with peers, and low levels of problem behaviors (Rydell,

Berlin, & Bohlin, 2003). Positive affect leads to smiling and laughing in infants and children. Positive affect can protect children from peer and parent rejection because positive emotions tend to elicit positive feelings from others (Rothbart & Bates, 1998). In the United States, positive affect is a very sought after characteristic. Parents favor it over other emotions and it is rewarded. Therefore, positive affect is typically viewed as adaptive in the United States (Cole & Tamang, 1998).

The adaptive nature of positive affect can be described in terms of the functionalist perspective of emotions. According to the functionalist perspective, people and the environment impact each other and emotions are seen as processes rather than single entities. Emotional behaviors may be responses to emotion and/or they may be forms of communication (Barrett, 1998). For example, infants may smile as a result of a parent doing something silly or infants may smile at the parent in hopes that the parent will respond to them. This type of behavior is adaptive for infants because it rewards them with what they want, positive attention. As a child develops and gets older, he or she will learn that positive affect usually leads to positive results. Therefore, the child will learn to control or hide negative emotions when they are not socially acceptable (Barrett, 1998). This skill of knowing when certain emotions are appropriate is very adaptive because it will lead to social acceptance.

The functionalist perspective also states that, in addition to being a process impacted by people and their environment, emotions are also functional. Functionalists divide emotions into many different categories, or families of emotions, and each category has three main functions. The first function is a behavior regulatory function. The second is a social regulatory function. In other words, the second function is

interpersonal communication. The third function is an internal regulatory function, or an intrapersonal function (Barrett, 1998). Because the focus of this paper is positive affect, the functions of positive emotion will be discussed. The first function is to regulate behavior. If an activity a person is doing is enjoyable and it is eliciting positive emotion the person will be inclined to continue the activity. The second function is to communicate to others, so the person will tell others verbally and/or nonverbally that the activity is an enjoyable one. The third function is internal regulation, so the person will expand the positive thoughts he or she is having about the activity. This will motivate the person to continue to do activities that are successful in creating positive emotions for them (Barrett, 1998). All of these functions aid in the continuation of positive affect for the person. However, according to this perspective, although all emotions can be adaptive, and typically are adaptive with respect to the person/environment relationship with which they are concerned, they may become maladaptive with respect to events and relationships with which they are not concerned, especially if they are too intense (Barrett, 1998). This is true not only for negative emotions, but also for positive ones. For example, in a classroom, silly behavior may elicit laughs and positive attention from classmates, but it may also distract the child from the school work on which he or she was supposed to be working. The potential negative impact of overly intense positive emotion has been understudied. Recently, however, a growing literature suggests that underregulated positive emotion, or exuberance, may be socially inappropriate and is associated with negative outcomes.

Children who are socially appropriate are those who have the ability to regulate their emotions. There is no one single definition of emotion regulation, but Cole, Michel,



and O'Donnell Teti (1994) propose one that summarizes many definitional ideas. They state that "emotion regulation might be defined as the ability to respond to the ongoing demands of experience with a range of emotions in a manner that is socially tolerable and sufficiently flexible to permit spontaneous reactions as well as the ability to delay spontaneous reactions as needed" (Cole et al., 1994). Emotion regulation is a developmental process that begins in infancy and continues throughout childhood. Infants rely on adults to help regulate their emotions and children are able to regulate their own emotions as they grow older (Cole et al., 1994). Regulation of emotions serves a function to the individual who is regulating. This function can be related to organizing internal processes, such as organizing attention or memory, or the function can be related to social communication (Cole et al., 1994).

Emotions are regulated in different ways for different people. They can be regulated, or modified, in order to decrease, magnify, get rid of, or redirect emotions that a person has (Cole, Martin, & Dennis, 2004). Regulation can include both overregulation and underregulation. Just as emotion regulation serves a function, so do underregulation and overregulation. Both under and overregulation usually serve an immediate purpose, but they may interfere with optimal development in the future (Cole et al., 2004; Cole, Michel, O'Donnell Teti, 1994). An example of overregulation that served an immediate purpose given by Cole et al (1994) is a daughter who has survived incest. When a daughter is sexually abused by her father she may "cut off" her emotions so she does not feel the distress that is caused. This can lead to the daughter's feeling numb about the situation and can cause memory loss. While this seems to help the girl during the abuse, it causes problems later on. Women who have "cut off" their emotions as young girls

have problems using certain emotions when they need to and they have problems with their memory because periods of time in their lives are forgotten (Cole et al., 1994). In this example, incest survivors have overregulated emotions related to help-seeking and avoidance. For the remainder of this paper, I will focus on underregulation of emotion.

A goal of many parents is to teach their children the socially acceptable rules for emotion expression. In the United States, positive affect typically is valued and children are reinforced for displaying it. People who grow up and are socialized in the United States may tend to believe that positive affect is valued in all cultures. However, this is not the case. In 1998, Cole and Tamang studied two cultural groups of young children and their mothers in Nepal. It was found that in one group the parental goal was that children show no emotion. They believed that showing any type of emotion would disturb their peaceful lifestyle. The other group valued masking negative emotion, but it was not found that they valued expressing positive emotion. This second group believed in having control over the self at all times, they were self-conscious about their feelings and did not want other people to know their feelings (Cole & Tamang, 1998). The authors believe that the Nepali children express emotions differently than children in the United States because socialization practices and cultural values are different.

In summary, positive affect is viewed as adaptive, functional, and valued in the United States. Because it is such a valued characteristic, many people in the United States assume that having more positive affect is better than having less. This assumption is interesting given that positive affect has not been widely researched (Cole, Michel, & Teti, 1994). The majority of emotions research focuses on negative affect and the behaviors that stem from it. The assumption that having more positive affect is better

than having less is one that researchers are beginning to study and contradict (Jamison, 2004; Rydell, Berlin, & Bohlin, 2003). A goal of this paper is to generate more interest in the study of positive emotions, in particular the study of underregulated positive emotion.

## **Exuberance**

When positive emotions become extremely intense and underregulated, they are referred to as exuberant emotions. Children who are exuberant can be described as being wild or out of control. They do not regulate their positive emotions and are therefore inappropriate when expressing themselves. Exuberant children can create an atmosphere of discomfort for others and they can make others feel overwhelmed (Jamison, 2004). Exuberant children have been found to be disruptive in elementary school (Chaplin, Cole, & Zahn-Waxler, 2005). They also show low levels of fear and inhibition in new situations (Fox, Henderson, Rubin, Calkins, & Schmidt, 2001).

Exuberance is distinct from appropriately regulated positive affect in that the latter is adaptive and exuberance is not. Exuberance can lead to later externalizing problem behaviors and possibly to later psychopathology (Rydell, Berlin, & Bohlin, 2003).

Researchers have only recently begun to study exuberance as a separate construct that is differentiated from other types of positive emotion. It is a positive emotion, but unlike most treatments of positive emotion in the literature, it is not considered to be adaptive. To date, exuberance has been studied in terms of searching for a possible genetic basis for the emotion (Schmidt & Fox, 2002), longitudinal studies to determine consistency of the trait over time (Fox et al., 2001), and longitudinal studies to determine

future personality and behavior characteristics (Eisenberg et al., 1996; Putnam & Stifter, 2005; Rydell, Berlin, & Bohlin, 2003). This portion of the paper will discuss each of these research categories.

Schmidt and Fox (2002) followed and studied four cohorts of children from birth to age four in a longitudinal study. Their focus was the origin and development of temperament and social behavior in children. As a part of the research, cheek cells were collected from each child. The cells were genotyped and examined. The researchers were looking specifically at the genes that regulate serotonin and dopamine. They wanted to find out if these genes were associated with children's temperament because they have been linked to personality differences in adults.

The dopamine D4 receptor gene has been found to play a role in novelty seeking behavior in adults. In fact, adults who reported high novelty seeking behaviors had longer versions of the D4 gene than adults who had lower levels of novelty seeking behaviors. The serotonin gene has been found to be associated with anxiety related personality traits in adults. Adults who had shorter versions of the serotonin gene had higher levels of anxiety than adults who had longer versions (Schmidt & Fox, 2002).

Based on the adult research on the relationship between the D4 receptor gene and high levels of novelty seeking behavior, Schmidt and Fox (2002) hypothesized that the longer version of the D4 receptor gene was associated with exuberant behavior in children. They found modest support for this hypothesis. Four-year-old children who were impulsive, had high novelty seeking behaviors, and who had high sensation seeking behaviors were found to have longer versions of the D4 receptor gene than children who scored lower on these behavioral characteristics. Because this finding is consistent with

the adult findings, the authors predict that children who have the long version of the D4 receptor gene will be at risk for externalizing problem behaviors in elementary school. Schmidt and Fox (2002) recommend analyzing other genes to see if there are others that are involved in personality development or development of behavior problems.

Exuberance was researched in a longitudinal study in 2001 by Fox, Henderson, Rubin, Calkins, and Schmidt. However, studying exuberance was not the main goal of that study. The main goal was to study temperamental traits in infants that were thought to predict behavioral inhibition in young children. The study of exuberance appeared as infants were screened to participate in the study. The researchers selected a group of infants who were high in negative reactivity, and who they therefore thought would show later behavioral inhibition, a comparison group who was low in reactivity, and a second comparison group of infants who were high in positive reactivity/exuberance. The positive reactive group was found to be so unique that the researchers decided to study the behavior trajectory of those infants as well as the trajectories of the negative and low reactive groups. It was predicted that this group would have its own unique behavior patterns and that children in this group would be much different than the negative reactive and low reactive groups (Fox et al. 2001).

The three groups of infants were studied at 9, 14, 24, and 48 months of age. The researchers measured brain activity at each age, and children's behavior was observed at 14, 24, and 48 months. At 14 and 24 months, the children participated in a behavioral inhibition task. In this task the children were brought into an unfamiliar room with an unfamiliar adult and were presented with an unfamiliar toy. The infants' reactions to these events were recorded and summarized. At 48 months the children were observed in

play situations with unfamiliar children of the same gender. When the children were four years old, they returned to the laboratory so researchers could measure their brain activity and observe their play with unfamiliar peers. Mothers filled out temperament and behavior questionnaires each time they visited the laboratory (Fox et al., 2001).

The results of this study indicated that the high positive/exuberant group of infants had a lower level of inhibition than the other two groups at 9, 14, 24, and 48 months of age. According to the mothers' reports, at 9 months the exuberant group had higher positive affect than the other groups. At ages 14 and 24 months, they were higher in pleasure scales and lower in social fear than the other two groups. At 48 months, the exuberant children were less shy, more sociable, and had fewer internalizing problems than the other children (Fox et al., 2001). In terms of the measured brain activity a "unique pattern of brain electrical activity" (Fox et al., 2001, p. 19) was found at 9 months and again at four years old. The exuberant group showed left frontal asymmetry while the high negative group showed right frontal asymmetry. Left frontal asymmetry has been shown to be associated with the expression of positive affect and approach emotions (Fox et al., 2001). The left frontal asymmetry was consistent four years later much more often in the exuberant group than right frontal asymmetry was consistent in the negative reactive group.

As predicted, the exuberant group was clearly distinguishable from the other groups in that their exuberant behaviors and brain measures were maintained over time and the other groups' behaviors were not maintained as consistently (Fox et al., 2001). The behaviors that remained consistent were high levels of sociability, lack of fear, and high approach to new situations. Because the exuberant group was so consistent in their

behaviors over time, the authors suggest that positive reactivity, including exuberance, be studied on its own (Fox et al., 2001).

A third study that looked at exuberance was one performed in 2005 by Putnam and Stifter. Putnam and Stifter (2005) were looking to find if externalizing problems were associated with high positive affect, low negativity, low inhibition, and high behavioral approach. In this study, infants were seen at 2 weeks old, 6, 12, 24, and 25 months of age. At 6 and 12 months the infants were assessed for inhibition and approach tendencies. At 24 and 25 months the infants were exposed to high and low intensity toys and their preferences were recorded. Behavior was also recorded at 24 and 25 months (Putnam & Stifter, 2005).

It was found that high intensity positive affect/exuberance was correlated with high approach tendencies toward high intensity toys. Infants who preferred high intensity toys at 12 months were more likely to prefer high intensity toys at two years old than infants who preferred low intensity toys at 12 months of age. In terms of behavior, high intensity positive infants were more likely to show externalizing behaviors at 24 months (Putnam & Stifter, 2005).

Eisenberg, Fabes, Guthrie, Murphy, Maszk, Holmgren, and Suh (1996) also found associations between high intensity positive emotions and problem behaviors. The basis of this study was to discover if there is a relationship between emotionality and regulation and elementary school children's behavior problems. Children in kindergarten, first grade, second grade, and third grade were studied two times during one academic year. Each time, the children and their parents came to a laboratory. Parents and teachers filled out behavioral questionnaires and completed a Q-sort. Children's responses to a calm

film about dolphins and a distressing film about a child getting burned were recorded. Children also participated in a behavior regulation task (Eisenberg et al., 1996).

It was found that problem behaviors were associated with lower attentional control and lower scores on the regulation task. The children who were more emotionally reactive had a more difficult time regulating themselves than other children who were less emotionally reactive. This was found for both negative reactivity and positive reactivity. Teacher and father reports of conduct problems were associated with high levels of positive emotion intensity. In addition, the researchers found that children who had high levels of regulation showed lower problem behaviors (Eisenberg et al., 1996).

The fifth, and final, study that will be discussed is one that also looked longitudinally at future behavior characteristics of children who are exuberant. Rydell, Berlin, and Bohlin (2003) noted that exuberance and the regulation of positive emotions have not been addressed very often in research. This lack of knowledge made it difficult for them to formulate a specific hypothesis regarding exuberance. However, they did have enough information to predict that low regulation of positive affect will lead to externalizing problem behaviors (Rydell et al., 2003). These researchers also wanted to try to figure out if positive emotions affected the future adaptation of children, and if so, in what manner.

In this study 151 children were followed for four years. The children were five years old when the study began and were nine years old when the study ended. At age five, the children went to the laboratory and were assessed for inhibition, disinhibition, and parental attachment. When the children were six years old their preschool teacher or



daycare provider filled out a behavior problem and social competence questionnaire. Six months after the questionnaire was filled out, the children went back to the laboratory with their mothers. During this session, the mothers filled out an emotion and behavior problem questionnaire. When the children were eight years old the children's teachers completed another questionnaire about behavior problems and social competence (Rydell et al., 2003). High scores on the social competence questionnaire indicated high levels of prosocial behavior and low scores on the questionnaire indicated low levels of prosocial behavior.

Overall, Rydell et al. (2003) found that positive emotions were strong predictors of adaptation in preschool, home, and elementary school settings. However, high positive emotionality with low regulation was associated with externalizing problem behaviors in all three contexts (Rydell et al., 2003). Exuberance was also found to be associated with low levels of prosocial behavior. The children who were able to regulate their positive emotion had higher levels of prosocial behavior than children who could not regulate their positive emotion. Rydell et al. (2003) recommend that exuberance continue to be studied and assessed because it can lead to maladaptive behavior and it seems to be an emotion that is powerful in the developmental process.

In summary, each of these five research studies is important because each one studies a different aspect of exuberance. These findings suggest that although exuberance is a positive emotion, it is not adaptive like other positive emotions. Exuberant children are not appropriate in their expression of positive emotions and their behaviors are therefore not socially acceptable. Jamison (2004) states in her book, *Exuberance: The Passion for Life*, that "things are fabulous, until they are catastrophic"

(p. 74). This quote refers to the idea that positive emotions are adaptive until they become too intense to be acceptable. These studies suggest that exuberance would be a negative influence on the development of peer relationships, because they are associated with externalizing behaviors and lower levels of prosocial behavior, which, in turn, have been associated with poorer peer relationships. However, to date, no studies have addressed the relation between exuberance and the development of positive peer relationships in preschoolers, which is the focus of this study. Before discussing the study, I will review the literature on peer relationships in preschool and their role in adaptive development.

### **Peer relationships**

Having friends is very significant for children and adolescents. Friendships are an important part of the developmental process. Children who have friends are more socially competent, cooperative, self-confident, altruistic, and less lonely than children who do not have friends (Hartup, 1996). However, these positive attributes seem to hold true only for children whose friends are considered to be supportive. Children who have friendships that contain many problems and conflicts are more disruptive and have more behavior problems than those with supportive friendships. Therefore, supportive friendships between children are developmentally advantageous, and conflict ridden friendships are developmentally disadvantageous (Hartup, 1996).

Children benefit not only from having supportive friendships, but also from being popular among their peers (Denham, Blair, DeMulder, Levitas, Sawyer, Auerbach-Major, et al., 2003; Denham & Holt, 1993; Johnson, Ironsmith, Snow, & Poteat, 2000; Walden, Lemerise, & Smith, 1999). Research has demonstrated that preschoolers do like some

peers more than others and dislike some peers more than others. Moreover, they can systematically and reliably indicate these preferences (Johnson, Ironsmith, Snow, & Poteat, 2000; Olson & Brodfeld, 1991). And, popularity is related to important future outcomes (Denham, et al., 2003; Denham & Holt, 1993; Johnson, Ironsmith, Snow, & Poteat, 2000; Walden, Lemerise, & Smith, 1999).

Higher popularity in preschoolers is associated with higher cognitive skills and lower aggression. Children who are more popular in preschool have been shown to be more socially competent and more likeable in kindergarten (Johnson et al., 2000). Denham et al. (2003) also found that peer relationships in preschool have long term effects on academic success in elementary school. They found that as popular preschoolers get older they tend to feel more positive about school, have more positive experiences at school, and achieve more in school than children who were unpopular in preschool. Popularity in preschool is associated with both current and future benefits and can, therefore, be an important part of preschoolers' development.

Just as popularity has current and future positive outcomes for children, rejection has current and future negative outcomes. Rejected preschoolers are more likely to engage in solitary play and express more loneliness than non-rejected children (Bullock, Ironsmith, & Poteat, 1988). They are more likely to exhibit antisocial behavior, externalizing behavior problems, have fewer positive social interactions with peers, and show more pathology at home and school (Bullock et al., 1988; French & Waas, 1985; Parker & Asher, 1985). Children who are rejected in preschool tend to obtain a negative reputation among their peers. Over time, this reputation does not leave them and they do not become more well-liked by their peers. Rejected preschoolers are at risk for

adjustment problems in elementary school and into adulthood (Shantz, 1983). Because there are many risks for children who are rejected, it is very important to identify ways in which children make friends and use this information to intervene in order to improve peer relationships for rejected children.

Numerous studies have been conducted on the characteristics of friends. An important characteristic for preschool children is proximity. Preschoolers' friends typically are the children who are closest to them physically. These are usually the children they interact with on a daily basis in their classroom. However, research has shown that propinquity is not the only factor in friendships, even in preschoolers. Rather, children choose friends who are similar to themselves (Challman, 1932; Epstein, 1989; Hartup, 1996; Kupersmidt et al., 1995; Rubin, Lynch, Coplan, Rose-Krasnor, & Booth, 1994). The "similarity-attraction hypothesis" states that "people who are similar to one another in personal attitudes and attributes will be attracted to each other, and, thus are more likely to become friends" (Kupersmidt et al., 1995, p. 440). There are many different personal attitudes and attributes that are similar between children. The similarities that are important to preschoolers can be different from the similarities that are important for adolescents.

Preschool children choose friends who are of the same gender and age (Epstein, 1989; Walden, Lemerise, & Smith, 1999). The traits that young children look for in a friend are similar interests and similar personalities. Preschool friends have similar play styles and they communicate clearly with one another because they have similar communication styles (Rubin et al., 1994). Preschool children were found to express a

significant preference for other children who were more behaviorally alike to them than unlike (Rubin et al., 1994).

Friendship is also associated with emotion regulation. Children who regulate their emotions are viewed more positively by their peers in school than those children who underregulate their emotions (Eisenberg, Guthrie, Fabes, Reiser, Murphy, Holgren, et al., 1997). Emotion regulation has been found to be a predictor of future social competence in the classroom by several researchers. It was found that preschool children who regulated their negative emotions and had high levels of effortful control were more socially competent in kindergarten (Blair, Denham, Kochanoff, & Whipple, 2004; Denham, Blair, DeMulder, Levitas, Sawyer, Auerbach-Major et al., 2003). One study found that emotion regulation was important in young children's abilities to sustain friendships. Ability to regulate their emotions in the fall positively predicted friendships in the spring (Walden, Lemerise, & Smith, 1999). These studies show that emotion regulation is positively associated with friendship, however they do not show whether or not children form friendships with other children based on similar levels of regulation of positive and negative emotion. Therefore, this study examined children's friendships in terms of their similarity in regulation levels of positive emotion.

In summary, in most cases, having friends is a developmental advantage for children. Friends provide important social support for each other and popularity in preschool children has been associated with positive future outcomes such as academic success in elementary school (Denham, Blair, DeMulder, Levitas, Sawyer, Auerbach-Major et al., 2003). On the contrary, rejection in preschool children has been associated with many negative future outcomes such as anti-social behavior and dropping out of

high school (Parker & Asher, 1987). The “similarity-attraction hypothesis” states that children choose their friends on the basis of similar interests, personalities, and behavior styles. The “similarity-attraction hypothesis” has received support from numerous sources, many of which are cited in this portion of the paper.

### **Conclusions and Hypotheses**

The study of exuberance is a relatively new area and the topic has not been widely researched. However, some important findings have come from this small amount of research. It has been shown that exuberance is a trait that is very consistent over time (Fox et al., 2001), it can lead to disruptive, externalizing problem behaviors in later childhood (Eisenberg et al., 1996; Putnam & Stifter, 2005; Rydell et al., 2003), it has a high possibility of being genetically based (Schmidt & Fox, 2002), and it is related to low levels of prosocial behavior (Rydell et al., 2003). Because exuberance research has demonstrated significant and interesting findings, many of the above researchers acknowledge a need for more research on the topic.

The friendship research shows that children choose friends on the basis of similarity (Challman, 1932; Epstein, 1989; Hartup, 1996; Kupersmidt et al., 1995; Rubin, Lynch, Coplan, Rose-Krasnor, & Booth, 1994). One important characteristic on which children base their friendships is similar behavioral styles (Rubin et al., 1994). Given this, children who are calm might be expected to be friends with calm children and children who are more physically active should be more likely to be friends with active children. Based on this literature, I hypothesize that exuberant children will state that they prefer to play with exuberant children to a greater extent than will non-exuberant

children. My second hypothesis is that exuberant children will be friends with exuberant children and non-exuberant children will be friends with non-exuberant children.

The peer sociometric literature shows that there is an association between being popular and positive future outcomes and an association between being rejected and negative future outcomes. Because exuberance is a trait that has been correlated with low levels of prosocial behavior and high externalizing, both of which are characteristics of rejected children, it is possible that exuberant children may be rejected by their peers. Based on this information, my third hypothesis is that young children who are exuberant will have fewer positive peer relationships than young children who are not exuberant. According to the “similarity-attraction hypothesis” rejected children will likely state that they prefer to play with other rejected children. Therefore, my fourth hypothesis is that exuberant children will state that they prefer to play with rejected children more than non-exuberant children prefer to play with rejected children. And because rejected children are at risk for serious negative future outcomes, it is important to identify whether or not exuberant children are rejected so that they can be provided with interventions to improve their peer relationships. This will ensure that the serious risks associated with rejected children do not come to fruition in exuberant children’s lives. Finally, an additional research question for this study, without much extant research upon which to base a directional hypothesis, is whether or not there will be a gender difference in tendency to be classified as exuberant versus non-exuberant.

## **Chapter 2: Method**

### **Participants**

The participants in this study were 41 young children between the ages of 34 months old and 68 months old who live in Northern Colorado. There were 22 girls and 19 boys in the study. The majority of the children had one sibling (65%) and all of the children attended child care outside of their homes. The majority of the children were European American (90.2%) and most children spoke English at home (82.9%). The education of the parents ranged from those who were high school graduates to those who had a PhD. The majority of the parents had a college education (80%).

A convenience sample was collected from two preschools in Fort Collins, Colorado. The majority of the participants were obtained from the Early Childhood Center on Colorado State University's campus. The remainder of the participants were recruited from the University Children's Center.

Thirteen of the children (8 boys and 5 girls) were classified as exuberant. Exuberance was operationally defined in terms of high scores on certain positive emotions and low scores on emotion regulation subscales of the parent version of the Children's Behavior Questionnaire (CBQ) and the parent version of the Emotions Questionnaire (EQ) (detailed later). An aggregate variable was created with these CBQ and EQ subscales and children who were in the top tercile of this aggregate were considered to be exuberant. Children in the bottom tercile were considered to be non-exuberant, and children in the middle tercile were considered to be moderate in positive



emotionality and regulation of positive emotionality. These questionnaires are further discussed in the measures portion of this paper.

## **Measures**

### **Exuberance**

Exuberance was conceptually defined as underregulated positive emotion, often described as wild and out of control behavior. It is also characterized by disruptive behavior that is inappropriate for the context in which it appears (e.g. school classrooms, at bedtime, etc.). As mentioned above, in this study it was measured by the parent versions of the Children's Behavior Questionnaire (CBQ: Rothbart, Adahi, Hershey, & Fisher, 2001) and the Emotion Questionnaire (EQ) that was developed by Rydell, Berlin, and Bohlin (2003). Specifically, five subscales from these two questionnaires (described shortly) were standardized and then added to create an exuberance aggregate, and then terciles for scores on this aggregate measure were used to create a high (exuberant), a medium (typical levels of positive emotion and regulation), and a low (low exuberant) group.

### **Children's Behavior Questionnaire**

The CBQ contains 15 temperament scales, each of which is comprised of 12-13 items. Each item is rated using a 7-point Likert scale that ranges from "extremely untrue of your child" to "extremely true of your child" (Rothbart et al., 2001). Three subscales from the CBQ were included in the aggregate used to classify children as exuberant: Positive anticipation ("Gets so worked up before an exciting event that s(he) has trouble sitting still"), (reversed) Inhibitory control ("Can lower his/her voice when asked to do so."), and (reversed) Soothability ("Has a hard time settling down for a nap") (Rothbart et

al., 2001, p. 1406). I originally planned to include High intensity pleasure in the aggregate as well; however, this subscale was correlated at a low to very low level with the other scales in the aggregate (.088 with Positive anticipation, -.016 with Inhibitory control, and -.23 with Soothability); thus, it was not included in the aggregate.

Rothbart et al. (2001) assessed the reliability of the CBQ using internal consistency reliability. Internal consistency reliability is used when a measure has more than one item and researchers want to find out if every item tests the same thing, in this case, temperament characteristics. The authors assessed the reliability of the CBQ two separate times, using Cronbach's alpha. In 1993, reliability was assessed when a group of 262 parents filled out the questionnaire. The range of alphas for the 15 subscales on the CBQ was from .67 to .94 and the mean alpha for this group was .77. A group of 171 parents filled out the questionnaire in 1994 and the alphas for the subscales ranged from .68 to .93 with the mean alpha being .78. These mean alphas indicate that the CBQ shows adequate to high internal consistency. In the current study, Cronbach's alpha was .79 for the Positive Anticipation subscale, .69 for the Inhibitory Control subscale, and .76 for the Soothability subscale.

Inter-observer reliability was also assessed by Rothbart et al. (2001). The authors examined the correlation between 49 sets of parents' scores for the same child and found a correlation range from .28 to .79 for the subscales. The mean parental agreement was found to be .51. Although this is not a large reliability coefficient, it is high for inter-parental agreement relative to most parent report temperament questionnaires (Goldsmith & Campos, 1990). The discrepancies between parental ratings are usually ascribed to differences due to differentiated contact with the children, with mothers often having

substantially more contact with their young children, and to differences in parental perceptions. The authors also found substantial test-retest reliability. Parents completed the CBQ twice with time two being two years after time one. Over time, the mothers' alphas ranged from .50 to .79 with a mean of .65 and the fathers' alphas ranged from .48 to .76, with a mean of .63. The authors state that these mean alphas seem high for a two year stability correlation (Rothbart et al., 2001).

Rothbart et al. (2001) assessed a type of construct validity, convergent validity, to determine whether or not the CBQ measured the constructs they wanted it to measure. The "evidence for convergent validity comes from a number of sources, including parental agreement and prediction of social and laboratory behavior patterns" (Rothbart et al., 2001, p. 1405). The authors cite studies reported by Kochanska, Murray, Jacques, Koenig, & Vandergeest (1996) and Carlson (1997) that related laboratory observations of children's behavior to their parent's scores on the CBQ. These studies both found moderate correlations between parent scores and relevant scores based on observations of children's behavior. (Rothbart et al., 2001).

### **The Emotions Questionnaire**

The Emotions Questionnaire contains 40 items which are rated on a 5-point Likert scale that ranges from "doesn't apply to my child at all" to "applies very well to my child" (Rydell, Berlin, & Bohlin, 2003, p. 34). The questionnaire measures four emotions: anger ("When angry or in a bad mood, my child reacts strongly and intensely."), fear ("My child often gets frightened and worried."), positive emotions-exuberance ("My child often gets happy, excited and in an exuberant mood."), and

sadness (“My child often becomes sad.”) (Rydell, et al., 2003, Appendix ). The positive emotions-exuberance scale was included in the exuberance aggregate.

The Emotions Questionnaire also measures emotion regulation for four emotions: anger (“When my child becomes angry he/she has difficulties calming down on his/her own.”), fear (“When my child sees or hears something scary it is easy for others, for instance a parent, to make him/her calm down.”), positive emotions-exuberance (“When my child wins a game or a contest he/she has difficulties quieting down on his/her own.” Reverse coded), and sadness (“If a toy is lost or broken he/she has difficulties finding something to make him/herself feel better.” Reverse coded) (Rydell, et al., 2003, Appendix). The regulation of positive emotions- exuberance (reversed) was used in the exuberance aggregate.

Rydell, Berlin, and Bohlin (2003) used test-retest reliability to show the reliability of their Emotion Questionnaire. The questionnaire was given to 24 sets of parents twice. There were five weeks between the two administrations of the questionnaire. The reliability for the emotionality scales ranged from .62 to .78. The reliability for the emotion regulation scales ranged from .74 to .79 (Rydell et al., 2003). This indicates that the test-retest reliability is adequate to strong. In the current study, Cronbach’s alpha was .71 for the Exuberance Emotionality subscale and .77 for the Exuberance Regulation subscale.

Construct validity was investigated by performing a correlation between the Emotion Questionnaire and the well known CBQ. It was found that many of the scales on the Emotion Questionnaire were significantly correlated with their respective CBQ scales (Rydell et al., 2003). In terms of emotionality, the anger scale of the EQ was

significantly correlated with the anger scale of the CBQ ( $r=.70, p<.001$ ), the anger scale of the EQ was negatively correlated with the soothability CBQ scale ( $r=-.34, p<.05$ ), the fear scale on the two measures were correlated ( $r=.52, p<.01$ ), the EQ scale of positive emotions/exuberance was positively correlated with the CBQ scales of anger ( $r=.43, p<.05$ ) and smiling and laughter ( $r=.39, p<.05$ ) and negatively correlated with the CBQ scales of soothability ( $r=-.33, p<.05$ ), attentional focusing ( $r=-.34, p<.05$ ) and inhibitory control, although the latter did not reach conventional levels of significance ( $r=-.27, p<.10$ ). In terms of regulation, the EQ anger regulation scale was correlated with the CBQ soothability scale ( $r=.50, p<.01$ ) and the inhibitory control scale ( $r=.33, p<.05$ ). The fear regulation scale was negatively correlated with the CBQ fear scale ( $r=-.42, p<.01$ ). The positive emotions/ exuberance regulation EQ scale was correlated with soothability ( $r=.42, p<.01$ ), attentional focusing ( $r=.35, p<.05$ ), and inhibitory control ( $r=.53, p<.001$ ) (Rydell et al., 2003).

Validity was also tested by administering the Emotion Questionnaire to elementary school teachers and administering a self-report measure of emotion regulation to elementary school students. Teacher and student reports of emotion regulation were significantly correlated ( $r=.28, p<.01$ ), as were student reports of emotion regulation and teacher reports of externalizing problems ( $r=-.30, p<.01$ ). Thus, student and teacher reports were correlated significantly, but at only low to moderate levels (Rydell et al., 2003).

### **Peer Sociometric Measures**

Peer relationships can be either positive or negative. In this study, positive peer relationships were conceptually defined as relationships in which children play in a

positive, willing manner with other children whom they consider to be their friends.

Negative peer relationships were conceptually defined as relationships in which children do not willingly play with children who they do not like and whom they do not consider to be their friends.

The researcher measured with whom each child in the class, who had parental consent to participate, liked playing and with whom each child did not like playing in a structured interview setting using a sociometric picture measure called a rating measure. For the rating measure, each child in a classroom was shown small pictures of every other child in the class. Each child was first asked to name each child to ensure that the children knew their classmates. Then, using closed ended questions the researcher asked the children to categorize the pictures into three boxes: children they “liked playing with”, children they “didn’t know whether they liked playing with” and children they “did not like playing with”. The “children they liked to play with” box had a happy face attached to it. The “children they didn’t know whether they liked playing with” box had a neutral face attached to it. There was a sad face attached to the box for the “children they did not like to play with”. The researcher looked at each child’s picture categorization and noted which pictures were put into which boxes. The researcher tallied, across participants, the number of times each child in the class was placed in the “like to play with” box, the number of times each child was placed in the “kind of like to play with” box, and the number of times each child was placed in the “do not like to play with” box. Thus, each child received three numerical scores based on where their picture was placed: the number of positive nominations received, the number of neutral nominations, and the number of negative nominations received. High positive

nomination scores signified acceptance, high negative scores signified rejection, and high neutral nomination scores signified neither strong acceptance nor rejection (Asher, Singleton, Tinsley, & Hymel, 1979; Olson & Lifgren, 1988). The researcher also looked at the scores of the exuberant children to determine whether they were popular (high acceptance, low rejection), rejected (high rejection, low acceptance), or neglected (low acceptance and rejection and high neutral).

The sociometric rating scale measure was also used as a friendship measure. For this measure, the researcher looked to see which children had reciprocal positive (“I like to play with”) nominations with other children. In other words, children were found who nominated other children who also nominated them. In the literature, these reciprocal nominations are usually limited to three and are considered “best friends” (Asher, Singleton, Tinsley, & Hymel, 1979; Dorval & Begin, 1985; Olson & Lifgren, 1988). However, in the current study, some children reciprocally nominated many children. For this reason, I thought of the measure as a “friendship” measure rather than a “best friends” measure. When two children positively nominated each other they were considered to be friends. The researcher examined whether or not exuberant children considered other exuberant children to be their friends. This information will be discussed in the results portion of this paper.

The reliability of the sociometric rating scale measure for young children has been shown with test-retest reliability. The reliability usually has been shown to be in the acceptable to high range; however, there has been a range of .47-.81 across all assessments in all studies (Asher et al., 1979; Dorval & Begin, 1985; Lu Jiang & Cillessen, 2005; Olson & Lifgren, 1988). Asher et al. (1979) tested two different groups

of children on two occasions. The first time, the rating scale was performed with 19 four year old children at a university preschool where the second measure was given four weeks after the first measure. The test-retest reliability was found to be  $r(17) = .81$ . The authors used test-retest reliability a second time at a community preschool with 12 four year old children. The measure was given twice and the administration was four weeks apart. The test-retest reliability of this second assessment was  $r(10) = .74$ .

Dorval and Begin (1985) used the rating scale measure with 23 preschool children. They gave the test five times during one school year and the highest test-retest reliability was found to be  $r(23) = .75$ . The lowest test-retest reliability was found to be  $r(21) = .47$ . The authors believe this low coefficient was the result of a combination of testing being performed too early in the formation of the preschool group, unequal lengths of time between testing intervals, and group attrition.

Olson and Lifgren (1988) had 79 preschool children in their study and they found test-retest reliability that was consistent with Asher et al.'s findings in 1979,  $(77) = .81$ . Overall, the test-retest reliability found by all three groups of researchers is typically moderate to high, and higher than other sociometric picture techniques, such as simple nomination procedures, that are often used with preschool children (Asher et al., 1979; Dorval & Begin, 1985; Olson & Lifgren, 1988).

Dorval and Begin (1985) assessed convergent validity of the sociometric rating scale measure with their sample of 23 preschool children. The rating scale measure was correlated with acceptance and rejection results of a sociometric nomination measure. In the nomination measure, children simply pointed to three pictures of children they liked to play with (acceptance) and three children they did not like to play with (rejection).



They did not categorize all of their classmates as is the procedure for the rating scale technique. The rating scale was highly positively correlated with acceptance,  $r=.82$ ,  $p<.05$ , and it was moderately negatively correlated with rejection,  $r=-.64$ ,  $p<.05$ . This indicates that both sociometric techniques seem to measure the same constructs.

### **Procedure**

Parents were recruited using an informational flyer that was distributed by the researcher. The informed consent was attached to the flyer. When they agreed to participate, they returned their signed informed consent and confidentiality forms. The completed parent CBQs and EQs were used to determine which children were exuberant and which children were not exuberant. Exuberant children scored in the top tercile of the previously noted exuberance aggregate. Non-exuberant children scored in the bottom tercile of the exuberance aggregate. And children in the middle tercile scored neither high nor low on the exuberance aggregate.

While the parents completed both of the questionnaires, the researcher used the sociometric rating scale measure with each child whose parents gave permission to participate. Each child was taken into a small room away from the other children and the picture measure was explained to them. The researcher told the children they were going to play a game with pictures of their classmates. The “game” was demonstrated by the researcher. She put pictures of four different people who were unknown to the children into boxes. It was important that the pictures were of people who were unknown to the child so there was no bias. As she put the pictures into the boxes she told the children that she liked to play with two of them so they were be put into the box with the smiley face attached. She told the children she did not like to play with one of the others so that

picture was put into the box with the sad face attached. And she told the child she did not really know whether she liked to play with the last one and she put in into the box with the neutral face on it. This ensured that the children understood the task. It was explained to the children that this was a game and their picture placements would be kept confidential. The children were told not to share their answers with others because it might make other children feel bad. It was made very clear that no one else, besides the researcher, would find out where the pictures were placed. The children were asked if they understood how to categorize the pictures. If they understood, they were given a stack of pictures of their classmates and were asked to categorize them. Once the children categorized all of the pictures, they were allowed to choose a sticker from the researcher's sticker box.

The pictures were shown to the children in a random order to control for order effects. To control for researcher bias, the researcher did not know the results of the CBQ or the EQ before she performed the sociometric picture measure with the children. Also, the researcher did not conduct the sociometric picture measure with any children she knew personally. A research assistant worked with children who were known to the researcher. Each child was assigned a number and all information was recorded according to the numbers. All results were kept confidential. Also, the children were taken to the small room in a random order.

### **Chapter 3: Results**

A Chi-square analysis was done to examine whether or not there was a difference between the three preschool classrooms in the exuberance terciles. The analysis indicated that there was not a significant difference between the exuberance terciles and the three classrooms,  $\chi^2=4.276$ ,  $df=1$ ,  $N=40$ ,  $p=.370$ . Thus, all focal analyses looked at exuberance terciles without considering classroom membership. For all effect sizes reported in this study, Cohen's criteria for magnitude of effects were used and .20 was considered smaller than typical, .50 was considered medium or typical, .80 was considered larger than typical, and effect sizes greater than 1.0 were considered much larger than typical.

This study's first hypothesis, exuberant children will state that they prefer to play with exuberant children more than non-exuberant children prefer to play with exuberant children, was tested with difference statistics. The researcher looked at each child's ratings of which classmates they "liked to play with", and determined how many of them were exuberant. The ratings ranged from zero to the total number of exuberant children in each classroom: classroom one ranged from zero to three, classroom two ranged from zero to two, and classroom three ranged from zero to 8. The entire sample was divided into exuberance terciles, the numbers of exuberant children nominated positively were prorated by dividing the number of exuberant children each child nominated by the total number of children in each class and multiplying this number by the harmonic mean of the sample, and an ANOVA was used to analyze the hypothesis.

The ANOVA indicated that exuberant children do not state that they preferred to play with more exuberant children in comparison to the number of exuberant playmates selected by nonexuberant and average/typical children. There was no statistically significant difference found among the three levels of exuberance: exuberant, average/typical, and nonexuberant, in positive nominations of exuberant children,  $F(2, 37) = .473, p = .627$ . The effect size,  $d$ , for the difference between average/typical children and nonexuberant children in the number of exuberant children they positively nominated was small,  $.308$ . And the effect size for the difference between exuberant children and middle children was also small,  $d = .302$ . The effect size was much smaller than typical for the difference between exuberant children and nonexuberant children,  $d = .001$ .

Further analysis with the ANOVA indicated that exuberant children did not nominate more exuberant children as those that they did not like to play with, nor did they nominate more exuberant children as those they “kind of like” to play with in comparison to the number of exuberant playmates who are not liked,  $F(2, 37) = .018, p = .982$ , or kind of liked,  $F(2, 37) = .380, p = .686$ , by average/typical and nonexuberant children. The effect sizes,  $d$ , for the differences between all three groups of children and the number of exuberant children they nominated negatively were less than  $.068$  and therefore much smaller than typical. The effect size,  $d$ , for the difference between exuberant children and average/typical children in the number of exuberant children they nominated neutrally was  $.298$ . This effect size is smaller than typical. And, the effect size was also smaller than typical,  $d = .264$ , for the difference between exuberant children and nonexuberant children in the number of exuberant children they nominated neutrally.

Finally, the effect size was much smaller than typical for the difference between nonexuberant children and average/typical children in the number of exuberant children they nominated neutrally,  $d=.036$ . Table 1 shows the means and standard deviations for each level of exuberance in each of the three nomination categories: positive, neutral, and negative.

To examine this study's second hypothesis, exuberant children will have proportionately more exuberant friends than nonexuberant children, difference statistics were used. A friendship measure was used to analyze the number of exuberant friends each child had. In order to qualify as a friendship, the positive nomination needed to be reciprocal. Then friends for each child were categorized as to whether or not they were exuberant, and the number of exuberant friends was tallied and divided by the total number of friendships.

Once the distribution of the proportion was examined, it was discovered that the distribution was not normal. Therefore, to normalize the distribution, the variable was transformed using the arcsine transformation. An ANOVA indicated that there was a statistically significant difference between exuberant, middle, and non-exuberant children in regard to the proportion of friends they had who were exuberant,  $F(2, 37) = 4.405, p = .019$ . The means and standard deviations for each exuberance tercile in the proportion of exuberant friends each group had are in Table 2 (shown below). The post hoc Games-Howell test indicated that exuberant and middle children differed significantly in the percentages of friends they had who were exuberant ( $p = .016, d = 1.159$ ). However, contrary to prediction, it was the middle group that had more exuberant friends. The effect size,  $d$ , for the difference between exuberant children and nonexuberant children in

the proportion of exuberant friends they had was typical, .678, as was the effect size,  $d=.501$ , for the difference between nonexuberant children and middle children in the proportion of exuberant friends they have.

This study's third hypothesis, young children who are exuberant will have fewer positive peer relationships than young children who are not exuberant, was analyzed using difference statistics. Each child received a score on positive nominations, negative nominations, and neutral nominations. To adjust for the different number of children in each classroom, the nominations in each category were prorated by dividing the number of nominations each child received by the total number of children in each classroom and multiplying this number by the harmonic mean of the sample. The scores ranged from zero to 11.18 for the number of positive nominations each child received and the scores ranged from zero to 10.45 for the number of negative nominations each child received. For these hypotheses, only the positive and negative nomination scales were utilized.

It was found that the two dependent variables, the number of positive nominations a child received and the number of negative nominations a child received, were correlated at a high level,  $r_s(39)=-.73, p<.001$ . Therefore, the two variables were aggregated into a preference measure derived by subtracting the number of negative nominations from the number of positive nominations. This new variable was analyzed as the dependent variable in an ANOVA. The results of this analysis indicated that there was no statistical difference between exuberant, average/typical, and non-exuberant children in the preference other children had for playing with them  $F(2, 37) = .947, p = .397$ . Table 2 (shown below) shows the means and standard deviations for each exuberance tercile for each groups' preference for exuberant children.

Table 1

*Means and Standard Deviations Comparing Exuberance Terciles in Nominations of Exuberant Children to Positive, Neutral, and Negative Categories*

Terciles	<i>n</i>	Positive		Neutral		Negative	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Exuberant	13	1.076	.9903	1.2	1.15	1.428	1.388
Middle	14	1.435	1.347	.8624	1.12	1.495	1.593
Nonexuberant	13	1.077	.9241	.9006	.99	1.371	2.024
Total	40	1.202	1.095	1.103	1.072	1.433	1.644

Table 2

*Means and Standard Deviations Comparing Exuberance Terciles to Proportion of Exuberant Friends, Preference for Exuberant Children, and Positively Nominated Rejected Children*

Terciles	<i>n</i>	Proportion		Preference		Rejected	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Exuberant	13	.0453	.1119	-.7686	5.322	1.539	1.45
Middle	14	.2652	.2401	1.616	5.061	1.714	1.684
Nonexuberant	13	.1544	.1981	.3486	2.557	1.539	1.266
Total	40	.1577	.2086	.4289	4.50	1.6	1.446

The effect size for the difference between exuberant children and average/typical children in the preference other children have for playing with them was typical,  $d=.460$ . The effect size for the difference between exuberant children and nonexuberant children in the preference others had for playing with them was smaller than typical,  $d= .268$ . The effect size,  $d= .312$ , was smaller than typical for the difference between nonexuberant children and average/typical children in the preference others have for playing with them.

This study's fourth hypothesis, exuberant children will state that they prefer to play with rejected children more than non-exuberant children prefer to play with rejected children, was analyzed using difference statistics. First, children were classified as rejected, based on the number of negative nominations they received. Those in the top half for negative nominations were considered rejected. Next, the researcher looked at each child's ratings of their classmates to determine which of them were placed into the "I like to play with" box. Of these nominations, the researcher looked to see how many were rejected children (using the previously stated operationalization of rejection). The number of positively nominated rejected children could have ranged from 0 to 19 (the total number of rejected children), but in actuality only ranged from 0 to 6. An ANOVA indicated that exuberant children did not state that they preferred to play with rejected children more than middle or nonexuberant children preferred to play with rejected children  $F(2, 37) = .064, p = .938$ . Table 2 (shown previously) shows the means and standard deviations for each exuberance tercile in the number of rejected children each group nominated positively. The effect size for the difference between exuberant children and middle children in the number of rejected children they preferred to play with was smaller than typical,  $d=.111$ . And, the effect size for the difference between exuberant



children and nonexuberant children in the number of rejected children they liked to play with was much smaller than typical,  $d=0$ . The effect size,  $d=.117$ , was also much smaller than typical for the difference between nonexuberant children and middle children in the number of rejected children they preferred to play with.

In an additional analysis, the variable for the number of rejected children that other children liked to play with was dichotomized into 1) children who did not nominate any rejected children as people they liked to play with and 2) children who nominated at least one rejected child as someone with whom they liked to play. A Chi-square analysis was performed to find out whether exuberant, middle, and non-exuberant children differed on whether they positively nominated a rejected child or not. The results indicated that the three exuberance groups did not differ and exuberant children were not more likely to positively nominate a rejected child than middle or non-exuberant children ( $\chi^2=.676$ ,  $df=2$ ,  $N=40$ ,  $p=.713$ ).

To examine the fifth, and final, research question in this study, whether or not there is a gender difference in tendency to be classified as exuberant, middle, or non-exuberant, nonparametric statistics were used. A Chi-square analysis indicated that there was no statistically significant difference in gender in regard to exuberant, middle, and nonexuberant children, ( $\chi^2=2.149$ ,  $df=2$ ,  $N=40$ ,  $p=.341$ ).

## **Chapter 4: Discussion**

The main purpose of the present study was to explore exuberant children's peer relationships with the goals of discovering whether or not exuberant children were friends with each other or preferred to play together more often than with other children, whether or not exuberant children had fewer positive peer relationships than other children, whether or not exuberant children preferred to play with rejected children more often, and whether or not there was a gender difference between the children who are exuberant and nonexuberant.

The results did not support the majority of the study's hypotheses. The one finding that was statistically significant was an exploratory analysis that emerged from the second hypothesis that stated exuberant children will be friends with exuberant children and nonexuberant children will be friends with nonexuberant children. It was discovered that children in the middle tercile had a significantly higher percentage of friends who were exuberant than exuberant children did. This finding was interesting as it did not support the original hypothesis that was based on dominant theory indicating that children typically choose friends who were behaviorally similar or have similar temperaments to themselves (Challman, 1932; Epstein, 1989; Gleason, Gower, Hohmann, & Gleason, 2005; Hartup, 1996; Kupersmidt et al., 1995; Rubin, Lynch, Coplan, Rose-Krasnor, & Booth, 1994). And, there is little, if any, friendship literature that indicates that young children will be friends with others who are different than themselves.

However, Aboud and Mendelson (1996) discussed a theory that is less dominant than the similarity attraction hypothesis that may help explain the significant result. This second theory also attempts to explain how children become friends, but hypothesizes that children select friends according to attributes in other children that they desire instead of simply becoming friends with others who are similar to themselves. Based upon a small amount of research, some examples of attributes that young children may find desirable in other children are temperament, personality, and just liking to play with a particular child in general. Aboud and Mendelson (1996) acknowledge that there is very little literature about exactly which attributes young children find desirable in friends, but there is some indication that children do select friends based on desirable attributes and not only on similar characteristics.

One study that supports the desirable attribute hypothesis involved kindergarten children. Mendelson, Aboud, and Lanthier (1994) found that kindergarten children who were most dominant, assertive, and attention seeking were those who were most desired by others in their classroom. Exuberant children have underregulated positive emotions and can therefore possibly be described as being attention seeking and dominant. Based on the speculation that exuberant children have similar characteristics to the most desirable kindergarten children in Mendelson, Aboud, and Lanthier's (1994) study it can be deduced that other children would find exuberant children to be desirable as friends. This may help explain why the children in the middle tercile had a high percentage of friendships with exuberant children. Perhaps they found the exuberant temperament to be desirable, and thus purposely sought exuberant children out as friends. And, exuberant children may not choose each other as friends because they may find a more

calm temperament more desirable. This is an area that would greatly benefit from further research. It is important to note that because friendships needed to be reciprocated, this interpretation is not necessarily contrary to the finding that the mean level preference score for exuberant children was the lowest (but non-significantly so). It could be that fewer children preferred exuberant children but that some children preferred them and had reciprocal friendships with them.

An additional explanation for the significant result is that middle tercile children found exuberant children to be good companions because they simply had fun together. Children who have fun together and share positive affect (smiling and laughing together), (Gifford-Smith and Brownell, 2003) tend to select each other as friends. However, this does not explain why exuberant children would not find other exuberant children more fun. It would be interesting to discover if middle tercile children specifically sought out exuberant children to be their friends because they thought these high energy children were more fun than more regulated children like themselves, or if the middle children were similar to the exuberant children in a way other than temperament, and the similarity attraction hypothesis was correct.

### **Limitations of the Present Study**

In regard to the study's findings that were not significant, it seems that one important hinderance was the fact that the size of the study sample was small, and therefore the analyses had little power. Past studies that focused on exuberant children had much larger samples. For example, Rydell, Berlin, and Bohlin (2003) had a sample size of 151 and Fox, Henderson, Rubin, Calkins, and Schmidt (2001) had a sample size of 433 with 45 of these being exuberant. I am led to the conclusion that the study might

have had more significant results if the sample had been larger because several of the hypotheses had medium effect sizes. If an analysis has a medium effect size, it is likely that significance would be reached with more power, if the findings with the small sample were representative.

A limitation to the generalizability of the findings is that the study's sample was not random. The sample was taken from two preschools on a university campus that care for children from parents who are highly educated with higher incomes than children from preschools that are not affiliated with a university. This difference may also lead to my sample having fewer truly exuberant children than I might find in the general population, given that exuberance was determined on the basis of high scores for this high SES sample, which still may be low relative to a more at-risk sample. Exuberance is linked to externalizing behaviors (Rydell et al., 2003; Putnam & Stifter, 2005; Eisenberg, Fabes, Guthrie, Murphy, Maszk, Holmgren, & Suh, 1996) and externalizing behaviors are more common in children from low income families (Ackerman, Izard, Schoff, Youngstrom, & Kogos, 2000; Campbell, Shaw, & Gilliom, 2000 ). Therefore, it seems possible that there would have been greater exuberance in lower income samples because of the correlation between exuberance and externalizing behaviors.

### **Future Research**

The findings from this study indicated that more research with exuberant young children and their peer relationships is needed. For example, typical effect sizes for hypothesis three, young children who are exuberant will have fewer positive peer relationships than young children who are not exuberant, indicated that children's preference for playing with more middle children than exuberant children might become

significant if the sample size were larger. Also, a larger sample size could bring more power to the analyses, and it would be possible that children's preference for playing with nonexuberant children over exuberant children could become significant. If these two analyses were significant, the hypothesis would be supported and it would be reasonable to state that exuberant children have fewer positive peer relationships than nonexuberant and middle tercile children.

An additional topic that deserves further research is the relation between exuberance, early onset bipolar disorder, and attention deficit hyperactivity disorder (ADHD). Exuberance is different from adaptive positive affect because it is underregulated emotion and adaptive positive affect is better regulated. Children with ADHD and/or early onset bipolar disorder also have issues with underregulated emotions and many of their behaviors seem to be similar to exuberant children's behaviors (Martel, 2009; Youngstrom, 2009). It would be interesting to find out whether exuberance could be a prodromal indicator of early onset bipolar disorder in some cases and/or be associated with ADHD.

### **Summary and Implications**

The study of exuberance as a separate construct from adaptive positive affect is fairly recent, however, as discussed in this paper, it has been studied in some important ways: finding a possible genetic basis for the emotion (Schmidt & Fox, 2002), discovering that the trait is consistent over time (Fox et al., 2001), and learning that the trait is correlated with future personality and behavior characteristics such as externalizing problem behaviors (Eisenberg et al., 1996; Putnam & Stifter, 2005; Rydell,

Berlin, & Bohlin, 2003). To date, there is no literature studying exuberant children and their peer relationships.

The current study focused on the topic of exuberant children and their peer relationships and this area should continue to be studied in the future because of past findings that indicate that exuberant children and children with poor peer relationships have negative future outcomes in many areas of life (Bullock et al., 1988; French & Waas, 1985; Parker & Asher, 1985). It is possible that if exuberant children had fewer positive peer relationships than other children, they may be more at risk for the negative future outcomes that are associated with poor peer relationships than nonexuberant children who have poor peer relationships. Although the results from the current study were inconclusive due to nonsignificant results and, thus, did not support the conclusion that exuberant children had fewer positive peer relationships than other children, the direction of effects for the preference score supported the possibility that other children tended not to nominate exuberant children as those they wanted to play with and tended to more frequently nominate exuberant children as those they did not want to play with. This direction of effects was consistent with predictions, and the effect sizes were typical. This indicates a need for future research in the area of exuberant children's peer relationships with larger samples of higher risk children. If future results are found to support this idea, it could indicate a need to develop an intervention program aimed at helping exuberant children with their peer relationships.

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